

REMARKS

35 U.S.C § 112

Claim 25 was rejected under 35 U.S.C. 112, first paragraph.

The examiner argues that: "The claim recites the limitation "wherein the mannequin is a humanoid robot having the first body suit with tactile sensors and actuators." Examiner was unable to find any instance in the disclosure of the robot or mannequin wearing a body suit."

For example, Applicant describes: "In addition, the mannequins are replaced by robots. For example, a robot 12b includes a series of motion actuators 103. Each motion actuator 103 placement corresponds to a motion sensor 101 on the user 22a so that each motion sensor activates a motion actuator in the robot that makes the corresponding movement."¹ Therefore, support for the humanoid robot having the first body suit with tactile sensors and actuators is supported by the above which describes replacement of the mannequin with a humanoid robot.

Therefore, Applicant contends that claim 25 is properly supported and withdrawal of this rejection is respectfully requested.

35 U.S.C § 103

The examiner rejected claims 1, 12, 14, 18 and 20-23 under 35 U.S.C. 103(a), as being unpatentable over Choy et al. (US 6695770) in view of Yee et al. (US 6016385).

The examiner stated:

6. In regards to claims 1 and 14, Choy discloses a virtual reality encounter system comprising: a mannequin coupled to a computer system wherein the mannequin is fitted with appropriate sensors that are connected to the computer system to transmit to another location and user device over a network (3:23-25), a headset, to display morphing animations and animated textures on the appropriate avatar (9:65-10:6) and a processor that overlays a virtual environment over one or more portions of the video image to form a virtual scene (8:47-58 and 9:65-10:6), Choy lacks explicitly stating the use of a camera supported by the mannequin.

7. In related prior art, Yee discloses a robot system wherein an operator controls the robot and receives sensory information from the robot, including a pair of cameras corresponding to the remote user's eyes coupled to the robot for receiving a video image where the cameras send the video images via a

¹ Subject application, page 6, lines 16-21.

communication network to the user (5:11-37). One skilled in the art would recognize the advantages of providing video signals to a remote user.²

As understood, the examiner has so far repeatedly acknowledged that the primary reference, Choy, fails to disclose “a camera supported by a mannequin, the camera for capturing an image of a scene, a processor receiving the image from the camera, overlaying a virtual environment over one or more portions of the image to form an image of a virtual scene and sending the image of the virtual scene to a communications network” as required by claim 1.

No combination of Choy and Yee disclose this combinations of features.

In providing the reasoning to combine teachings of Choy and Yee, the examiner cites *KSR v. Teleflex*, 82 USPQ2d 1385 (2007) in “Response to Arguments” and argues that:

40. Applicant's arguments filed 01/22/2009 have been fully considered but they are not persuasive. Applicant argues that Choy does not contain motivation for using cameras to obtain video of the other partner in the two user scenario. While examiner agrees and has previously stated that Choy does not explicitly disclose cameras, KSR forecloses the argument that a *specific* teaching, suggestion, or motivation is required to support a finding of obviousness. See *Ex parte Smith*, -- USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (citing KSR, 82 USPQ2d at 1396). Applicant additionally argues that the motivation must be found in the prior art and not in the teachings of the specification. The teachings of Choy are of a remote congress system and examiner contends that when engaging in remote congress, it would be obvious that the participants may wish to see each other's images. See, for instance, previously cited Sandvick; Warren J. et al. US 6368268 B1 (3:21-26) which is cited as evidence but not relied upon.

The examiner misapplies the Supreme court's holding reached in *KSR*. One should bear in mind that rather than overruling the Teaching/Suggestion/Motivation Test (“TSM Test”), the Supreme court in *KSR* held that a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Therefore, a reason for combining references is still an important consideration, even though it need not be a rigid formula, nor a formalistic conception. Further, the Supreme court in *KSR* reasoned that although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.

² Final Office Action, page 3, item 40.

KSR, 82 USPQ2d at 1396. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known. *Id.* The TSM Test is not overruled or nullified. Rather, courts are cautioned not to rigidly apply the test. As a result, previous precedent as to obviousness remains good law, to the extent it is consistent with a flexible approach to the TSM Test. For example, in *Dystar v. C.H. Patrick Co.*, 464 F.3d 1356, 1365 (Fed.Cir.2006), the court held it is difficult to see how the “suggestion test” could be seen as rigid and categorical given the myriad cases over several decades in which panels of this court have applied the suggestion test flexibly. Obviousness is a complicated subject requiring sophisticated analysis, and no single case lays out all facts of the legal test. *Id.* at 1367.

In this regard, Applicant contends that the current Office Action the examiner does not provide a logical line of reasoning as to why Choy in combination with Yee would suggest using a camera to obtain video of the other partner in a two user scenario as asserted by the examiner on page 11 in which a virtual environment is overlaid over one or more portions of the image. There is nothing in Choy or Yee that manifests this alleged intention and the examiner's assertion only constitutes impermissible hindsight gleaned from Applicant's teachings.

In addition, in response to Applicant's argument that modifying Choy to incorporate a camera would require a substantial redesign, the examiner stated that: “Choy clearly discloses the abilities to handle video data in the creation of images for the system (8:53-58). Additionally, while Choy is directed to a polygonal system, it is attempting to achieve a high degree of realism (3:16-21, 31-34, 10:52-53, etc), and as such, real images would be ideal to provide the texture mapped to the polygons of the avatars as is well understood in the art of computer graphics. Thus, the system of Choy in view of Yee teaches a virtual scene with video data and a virtual environment as set forth in the claims.”³ Applicant disagrees.

Rather than using live pictures captured by a camera deployed in the mannequin, Choy merely describes using software to build a database of images that can be displayed to the user with user selecting backgrounds derived from the database of images.

In this regard, Choy at col. 8, lines 47-58 states:

Software is used to approximate where all the significant facial muscles are on the meshed frame and maps this on the individuals rendered face so that a software

³ Final Office Action, page 12, item 41.

graphics engine can be used to render the mesh thereby generating the character so that the desired visual expressions can be created.

To provide a database of images photographic or video recording is made of a variety of scenes (sex or otherwise) each with a blue background so that this can be superimposed on selected backgrounds such as landscape. Frame by Frame processing is then conducted to create library of sex positions.

Choy's ability to handle video data at most resembles that of a regular digital projector or DVD player and the like. As the reference is completely silent as to the use of a camera for capturing an image, it is unclear why the absence of this ability, bears any connection or significance to making the incorporation of a camera in the system obvious or beneficial, as argued by the examiner.

In addition, the examiner's assertion that using real images (captured by a camera) to achieve a high degree of realism in Choy's polygonal system would be ideal is entirely unsupported and again is a reason that only comes from Applicant's teachings. Choy describes a real-time motion capture method to monitor user movements using various sensors disposed on the user's body. For example, Choy at col. 5, lines 46-55 reads:

Preferably, however, the users movement must be monitored and processed by the PC in real time. All major limb segments must be read. One known motion tracking system is called the Motion Star Wireless from Ascension Technologies. It is a wireless solution that can read up to 20 sensors in real time. This will allow the sensors to be positioned on the major limb segments (such as the upper arm, lower arm, hand, head, etc.) and be able to transmit the position and orientation of each of the segments to the PC with a high degree of accuracy.

Next, Choy describes how this software-controlled motion tracking system is deployed in both single user and the user-user scenarios:

In both the single user and the user-user scenarios, the actions and reactions of the avatars will be based on a set of inputs received from the user(s). The various limb-tracking devices will allow the software to know exactly what each user is doing, and with the additional devices and sensors on the body, the software is aware of information regarding a range of other states. When applied to their representing avatar, these alterations will add to the accurate portrayal of their level or state of arousal. These would include: User temperature, resulting in altering his/her avatar flesh tone. User breathing, resulting in exaggerated/deeper chest movements, and be additional to the information being passed by any hardware devices associated with the users genitalia.⁴

⁴ See Choy at col. 9, lines 42-55.

In particular, Choy discloses tracking and translating movements into appropriate avatar animations in a user-user environment:

In the user-user environment, all of the limb movements of the avatars will be controlled directly by the users by means of their tracking devices. Facial expressions could be registered in several ways, the simplest being a choice of buttons, but the most effective being the user of additional sensors monitoring the users face movements. (or LIPSinc described earlier). These would be translated into the morphing animations and animated textures on the appropriate avatar, as detailed previously.⁵

As such, using a software programmed motion tracking system to control various sensors disposed on the user's body, Choy can achieve high degree of realism in a virtual reality world. There is neither slightest indication in Choy nor any logical reason to infer that using a camera for capturing an image would be ideal to nor in fact could achieve the same result.

In addition, Choy does not disclose or suggest "a processor receiving the image from the camera, overlaying a virtual environment over one or more portions of the image to form an image of a virtual scene ..." as also required by claim 1 at least because Choy merely superimposes recorded images with user selected background,⁶ and such images are not received from a camera.

Claim 14 is allowable over Choy and Yee at least for the reasons discussed in claim 1.

Claims 12 and 22 depend directly from claim 1 and 14, respectively. Claim 12 recites that "the set of goggles, comprises a receiver to receive the virtual scene." As admitted by the examiner, Choy fails to describe that "a processor receiving the image from the camera, overlaying a virtual environment over one or more portions of the image to form an image of a virtual scene and sending the image of the virtual scene to a communications network," which is an indispensable prior step to form a virtual scene for claim 12. Therefore, claims 12 and 22 are allowable over Choy.

Claims 18, 20, 21, and 23 are allowable over Choy and Yee for at least the reasons given in claims 1 and 14.

⁵ Choy at col. 9, line 65 - col. 10, line 6.

⁶ *Id.* at col.8, lines 53-58.

The examiner rejected claims 2-6, 10, 11, 13 and 15-17 under 35 U.S.C. 103(a), as being unpatentable over Choy in view of Yee as applied to claim 1 above, and further in view of Dundon (US 7046151).

Applicant contends that claims 2-6, 10, 11, 13 and 15-17 are allowable over Choy in view of Yee and further in view of Dundon at least for the reasons discussed in claim 1, in that Dundon does not cure the deficiencies of the combination of references applied to independent claim 1.

The examiner rejected claims 7, 8, 9 rejected under 35 U.S.C. 103(a), as being unpatentable over Choy in view of Yee and Dundon as applied to claim 6 above, and further in view of Abbasi (US 6786863).

Applicant contends that claims 7, 8, and 9 are allowable over Choy in view of Yee and Dundon and further in view of Abbasi at least for the reasons discussed in claim 1, in that Abbasi does not cure the deficiencies of the combination of references.

As explained above, nothing in Choy describes or suggests using a microphone or a camera to promote a more realistic interaction among multiple parties. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The examiner rejected claim 19 under 35 U.S.C. 103(a), as being unpatentable over Choy in view of Yee as applied to claim 18 above, and further in view of Abbasi.

Claim 19 is allowable over Choy in view of Yee and further in view of Abbasi at least for the reasons discussed in claim 1, in that Abbasi does not cure the deficiencies of the combination of referenced applied to claim 1.

The examiner rejected claims 24-25 under 35 U.S.C. 103(a), as being unpatentable over Choy in view of Dundon and Abbasi.

Claim 24 further distinguishes over the references. Claim 24 includes the features of "... a first mannequin including ... a first camera supported by the first mannequin ... a second mannequin including ... a second camera supported by the second mannequin, ... a first body suit having motion sensors disposed over the first body suit, ... motion actuators ... and a processor receiving and processing the first image and the second image over a communications network. Claim 24 also includes a set of goggles having a display ... rendering on the display at least one of the first image and the second image ... and a second body suit"

The examiner argues on page 10 regarding item 34 that: "Therefore it would have been obvious to one skilled in the art at the time to combine the system of Choy with the teachings of Abbasi because the use of sight and sound is important for easy communication and as Choy suggests, the combination of touch, audio and visual stimulation is a powerful and effective means of communication (1:19-22)." Applicant contends the claims limitations are not puzzle pieces to be matched to atomized prior art reference insinuations, and examined out of context. As presented above, Choy generates touch, audio and visual stimulation in a virtual reality environment. Choy focuses on computer generated imagery in virtual reality, such that the avatars (representatives of the participants in virtual reality) and the environment they are to be experienced can be many and varied.⁷ Choy discloses creating audio and visual stimulations using software, yet there is no indication that Choy intends to use microphone and camera to exchange audio and visual signals among multiple participants. For example, with respect to audio simulation, Choy states⁸:

Sound handling is a desirable component of the preferred embodiment since sound is obviously an important part of the overall experience. Sound must be sampled at a high enough bit-rate and frequency to make it realistic.

Provision for positional audio must also be made. In other words a sound of a car in the virtual world must appear to originate from the car. This is known as 3D sound localisation and software development kits are available to provide the programmer with the necessary algorithms to program such sounds.

Claim 24 is allowable because no combination of Choy, Yee, Dundon and Abbasi suggests at least a camera supported by both the first and the second mannequins. In addition, claim 24 is also allowable because no combination of the references suggests the arrangement of

⁷ Choy, col. 11, lines 18-20.

⁸ *Id.* at col. 11, lines 34-43.

the first and second mannequins. Claim 25 is allowable over Choy, Yee, Dundon and Abbasi for at least the reasons given in claim 24.

This Reply includes an Information Disclosure Statement.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing remarks, Applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

This reply is accompanied by an Information Disclosure Statement and Request for Continued Examination.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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